



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20590
www.uspto.gov

APPLICATION NO	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO	CONFIRMATION NO
09 651,790	08/30/2000	Pary Baluswamy	CE 027 PROV	2095

7500 11/06/2002

Samuel E Webb
Trask Britt
P O Box 2550
Salt Lake City, UT 84110

EXAMINER

PIZARRO CRESPO, MARCOS D

ART UNIT PAPER NUMBER

2814

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/651,790

Applicant(s)

BALUSWAMY ET AL.

Examiner

Marcos D. Pizarro-Crespo

Art Unit

2814

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☐ Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) 1-15 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-21 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-21 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☒ The proposed drawing correction filed on 03 January 2001 and 24 May 2002 is: a) ☒ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- 1) ☐ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17 2(a)).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121

Application/Control Number: 09/651,790 (Non-Final Rejection)
Art Unit: 2814

Page 2

Attorney's Docket Number: 4307 US (99-1193)

Filing Date: 8/20/2000

Claimed Foreign Priority Date: none

Applicant(s): Baluswamy et al.

Examiner: Marcos D. Pizarro-Crespo

DETAILED ACTION

This Office action responds to the amendment (paper no. 17) filed on 8/26/2002.

Continued Examination Under 37 CFR 1.114

1. A request for a continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after a final rejection. Since this application is eligible for a continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action (paper no. 16) has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 9/18/2002 has been entered.

Acknowledgment

2. The amendment (paper no. 17) filed on 8/26/2002 in response to the Office action (paper no. 16) mailed on 6/19/2002 has been entered. The present Office action (paper no. 20) is made with all the suggested amendments being fully considered. Accordingly, pending in this Office action are claims 1-21.

3. The proposed drawing corrections and/or the proposed substitute sheets drawings, filed on 1/3/2001 and on 5/24/2002 have been approved. A proper drawing

correction or corrected drawings are required in reply to the present Office action to avoid **ABANDONMENT** of the application. The correction to the drawings *will not* be held in abeyance.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 16-18 are rejected under 35 U.S.C. 102(b) as being anticipated by Deguchi (JP 62-18714).

6. Deguchi shows (see, e.g., fig. 1, abstract) all aspects of the instant invention including a method to form an overlay target including a series of raised lines, the method comprising:

- providing a substrate **10**
- depositing a resist layer **15** over the substrate **10**
- patterning the resist layer **15** to include a resist pattern defining the overlay target including a series of raised lines (see, e.g., fig. 1(a); abstract)
- etching the substrate **10** to form the overlay target including the resist pattern with the series of raised lines (see, e.g., fig. 1(b))

comprises silicon

8. Regarding claim 18, Deguchi deposits the resist layer **15** directly over the semiconductor substrate **10** (see, e.g., fig. 1a).

9. Claims 16, 19, and 20, are rejected under 35 U.S.C. 102(b) as being anticipated by Kinoshita (JP 58-90728).

10. Kinoshita shows (see, e.g., fig. 3) all aspects of the instant invention including a method to form an overlay target including a series of raised lines, the method comprising:

- providing a substrate **1**
- depositing a resist layer **26** over the substrate **1**
- patterning the resist layer **26** to include a resist pattern defining the overlay target including a series of raised lines (see, e.g., fig. 3C)
- etching the substrate **1** to form the overlay target including the resist pattern with the series of raised lines (see, e.g., fig. 3E)

11. Regarding claim 19, Kinoshita shows that a material layer **21** may be deposited over the top surface of the semiconductor substrate **1** (see, e.g., fig. 3B).

12. Regarding claim 20, Kinoshita shows that the resist layer **26** may be deposited over the material layer **21** and that the step of etching the substrate **1** comprises etching the material layer **21** (see, e.g., figs. 3C-3E).

Claim Rejections - 35 USC § 103

Art Unit: 2814

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

14. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

15. Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kinoshita in view of Xu (US 5908319).

16. Regarding claim 21, Kinoshita shows most aspects of the instant invention (see paragraph 10-12 above), except for the substrate etching-step comprising wet etching the substrate **1** to form the overlay target. Kinoshita (pp.3/col.1/ll.5-12) differently teaches the use of plasma etching.

Xu (col.1/ll.10,11,21,25), on the other hand, teaches that wet etching and plasma etching are known etching techniques that are conventionally used in the fabrication of integrated circuits. In other words, etching is typically performed with either wet etching

It would have been obvious to a person having ordinary skill in the art at the time of the invention to have a wet-etching step instead of the plasma-etching step in

Kinoshita's process, as taught by Xu, since etching is typically performed in the semiconductor industry by either plasma-etching or wet-etching.

Response to Arguments

17. The applicants argue:

Deguchi and Kinoshita fail to disclose an overlay target with a series of raised lines as described in the claimed invention. Amended claim 16 recites a method for forming an overlay target including a series of raised lines. The claimed method includes patterning a resist layer to define the overlay target and etching the substrate to form the overlay target including the resist layer with the series of raised lines. Deguchi and Kinoshita fail to use the resist pattern formed in the resist layer to etch that same resist pattern into the substrate. Clearly, Deguchi's resist pattern and the pattern etched into Deguchi's substrate are very different (see, e.g., fig. 1(b)). Likewise, Kinoshita's resist pattern and the pattern etched into Kinoshita's substrate are clearly very different (see, e.g., fig 3E).

The examiner responds:

The feature upon which the applicants rely to support the above argument (*i.e.*, using a resist pattern formed in a resist layer to etch that same resist pattern into a substrate) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Conclusion

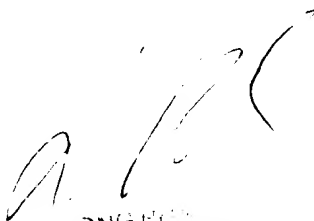
18. Papers related to this application may be submitted directly to Art Unit 2814 by facsimile transmission. Papers should be faxed to Art Unit 2814 via the Art Unit 2814 Fax Center located in Crystal Plaza 4, room 3C23. The faxing of such papers must conform to the notice published in the Official Gazette, 1096 OG 30 (15 November 1989). The Art Unit 2814 Fax Center number is **(703) 308-7722** or **-7724**. The Art Unit

19. Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Marcos D. Pizarro-Crespo** at **(703) 308-6558** and between the hours of 9:00 AM to 7 30 PM (Eastern Standard Time) Monday through Thursday or by e-mail via Marcos.Pizarro@uspto.gov. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wael Fahmy, can be reached on (703) 308-4918.

20. Any inquiry of a general nature or relating to the status of this application should be directed to the **Group 2800 Receptionist** at **(703) 308-0956**.

21. The following list is the Examiner's field of search for the present Office Action:

Field of Search	Date
U.S. Class / Subclass(es): 257/797 438/401, 462, 704, 706, 709-711, 719, 745, 783, 975	10/23/2002
Other Documentation:	
Electronic Database(s): EAST (USPAT, EPO, JPO)	10/23/2002


LONG PIP
PRIMARY EXAMINER

Marcos D. Pizarro-Crespo
Patent Examiner

marcos.pizarro@uspto.gov